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UTILIZATION OF THE SAME

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<150> US 60/491837

<151> 2003-07-31

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Met Pro Asn Gly Val Leu Glu Arg Ala Ala Pro Asp Asp Leu Ile Asp

365

370

375

aag aaa tgg cag agg agg gac tac ctc ggc gtg cac ccg cag aag cag 11207

Lys Lys Trp Gln Arg Arg Asp Tyr Leu Gly Val His Pro Gln Lys Gln

380

385

390

395

gaa ggg atg tcc tac gtc ggc ctg cac gtg ccc gtc ggc cgg gtg cag 11255

Glu Gly Met Ser Tyr Val Gly Leu His Val Pro Val Gly Arg Val Gln

400

405

410

gcg gcg gac atg ttc gag ctc gcc cgc ctt gcc gac gag tat ggc tcc 11303

Ala Ala Asp Met Phe Glu Leu Ala Arg Leu Ala Asp Glu Tyr Gly Ser

415

420

425

ggc gag ctc cgc ctc acc gtg gag cag aac atc gtg atc ccg aac gtc 11351

Gly Glu Leu Arg Leu Thr Val Glu Gln Asn Ile Val Ile Pro Asn Val

430

435

440

aag aac gag aag gtg gag gcg ctg ctc gcc gag ccg ctg ctt cag aag 11399

Lys Asn Glu Lys Val Glu Ala Leu Leu Ala Glu Pro Leu Leu Gln Lys

445

450

455

2 2 / 6 8

ttc tcc ccg cag ccg tcg ctg ctg ctc aag ggc ctg gtc gcg tgc acc 11447
Phe Ser Pro Gln Pro Ser Leu Leu Leu Lys Gly Leu Val Ala Cys Thr
460 465 470 475

ggc aac cag ttc tgc ggc cag gcc atc atc gag acg aag cag cgg gcg 11495
Gly Asn Gln Phe Cys Gly Gln Ala Ile Ile Glu Thr Lys Gln Arg Ala
480 485 490

ctg ctg gtg acg tcg cag gtg gag aag ctc gtg tcg gtg ccc cgg gcg 11543
Leu Leu Val Thr Ser Gln Val Glu Lys Leu Val Ser Val Pro Arg Ala
495 500 505

gtg cgg atg cac tgg acc ggc tgc ccc aac agc tgc ggc cag gtg cag 11591
Val Arg Met His Trp Thr Gly Cys Pro Asn Ser Cys Gly Gln Val Gln
510 515 520

gtc gcc gac atc ggc ttc atg ggc tgc ctc acc aag gat agc gcc ggc 11639
Val Ala Asp Ile Gly Phe Met Gly Cys Leu Thr Lys Asp Ser Ala Gly
525 530 535

aag atc gtc gag gcg gcc gac atc ttc gtc ggc ggc cgc gtc ggc agc 11687
Lys Ile Val Glu Ala Ala Asp Ile Phe Val Gly Gly Arg Val Gly Ser
540 545 550 555

gac tcg cac ctc gcc ggc gcg tac aag aag tcc gtg ccg tgc gac gag 11735
Asp Ser His Leu Ala Gly Ala Tyr Lys Lys Ser Val Pro Cys Asp Glu

2 3 / 6 8

560	565	570	
ctg gcg ccg atc gtc gcc gac atc ctg gtc gag cgg ttc ggg gcc gtg			11783
Leu Ala Pro Ile Val Ala Asp Ile Leu Val Glu Arg Phe Gly Ala Val			
575	580	585	
cgg agg gag agg gag gag gac gag gag tag gagcacagac tggggtggtt			11833
Arg Arg Glu Arg Glu Glu Asp Glu Glu			
590	595		
tgcttgctcc ggtgatctct cgccgtcctt gtaaagtaga cgacaatatg ccttcgccca			11893
tggcacgctt gtactgtcac gttttggttt gatctttagtag cccaaaagtt gtgttcattc			11953
tcgttacagt cttacagagg atgattgatt gataaataaa naagaaacag attctgcaac			12013
tgttcatcgc tggttcctaaa tctgatttcg cgatagtatc ttgtctgacc tgtcccaatc			12073
gcagtgcctaa aaccatataa tcttgcaagc aatgaaatt gaaagagttc aatgcaacca			12133
ctaacggtct aacaacatga taaggcct			12161

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cctctcgtct ttcccttgcc ggcagcagag gaggcggcag cgacggcttc agctgctccc	180
acgggcccga tcgggcagtg gcggtggcgt cggcggcttc cgctggcgaa tccggcgggt	240
gaatcgggtg aaatttgggt gacccccgat acaaatcagt gttccgatag gtaataacct	300
gctctcagca tctgcccttt tgaattcgcc aagagccagc atctgccctt ttgaattcgc	360
caagggccag catctgccc tttgattttg aattcgccaa gagccagcaa cagcgccccc	420
gcgccccctc cctcctccgc aataaacagc cacacggccc gccccatgt ccaccctcat	480
cgccacagcg caccaccacc accaccacca ccaccaccac cgtctccagc c atg gcc	537

Met Ala

tcc tcc gcc tcc ctg cag cgc ttc ctc ccc ccg tac ccc cac gcg gca	585
Ser Ser Ala Ser Leu Gln Arg Phe Leu Pro Pro Tyr Pro His Ala Ala	
5 10 15	
gca tcc cgc tgc cgc cct ccc ggc gtc cgc gcc cgc ccc gtg cag tcg	633
Ala Ser Arg Cys Arg Pro Pro Gly Val Arg Ala Arg Pro Val Gln Ser	
20 25 30	
tcg acg gtg tcc gca ccg tcc tcc tcg act ccg gcg gcg gac gag gcc	681
Ser Thr Val Ser Ala Pro Ser Ser Ser Thr Pro Ala Ala Asp Glu Ala	
35 40 45 50	
gtg tcg gcg gag cgg ctg gag ccg cgg gtg gag cag cgg gag ggc cgg	729
Val Ser Ala Glu Arg Leu Glu Pro Arg Val Glu Gln Arg Glu Gly Arg	
55 60 65	
tac tgg gtg ctc aag gag aag tac cgg acg ggg ctg aac ccg cag gag	777
Tyr Trp Val Leu Lys Glu Lys Tyr Arg Thr Gly Leu Asn Pro Gln Glu	
70 75 80	
aag gtg aag ctg ggg aag gag ccc atg tca ttg ttc atg gag ggc ggc	825
Lys Val Lys Leu Gly Lys Glu Pro Met Ser Leu Phe Met Glu Gly Gly	
85 90 95	

atc aag gag ctc gcc aag atg ccc atg gag gag atc gag gcc gac aag 873
 Ile Lys Glu Leu Ala Lys Met Pro Met Glu Glu Ile Glu Ala Asp Lys
 100 105 110

ctc tcc aag gag gac atc gac gtg cgg ctc aag tgg ctc ggc ctc ttc 921
 Leu Ser Lys Glu Asp Ile Asp Val Arg Leu Lys Trp Leu Gly Leu Phe
 115 120 125 130

cac cgc cgc aag cat cag tat ggg cgg ttc atg atg cgg ctg aag ctg 969
 His Arg Arg Lys His Gln Tyr Gly Arg Phe Met Met Arg Leu Lys Leu
 135 140 145

cca aac ggt gtg acg acg agc gag cag acg agg tac ctg gcg agc gtg 1017
 Pro Asn Gly Val Thr Thr Ser Glu Gln Thr Arg Tyr Leu Ala Ser Val
 150 155 160

atc gag gcg tac ggc aag gag ggc tgc gcc gac gtg aca acc cgc cag 1065
 Ile Glu Ala Tyr Gly Lys Glu Gly Cys Ala Asp Val Thr Thr Arg Gln
 165 170 175

aac tgg cag atc cgc ggc gtc acg ctc ccc gac gtg ccg gcc atc ctc 1113
 Asn Trp Gln Ile Arg Gly Val Thr Leu Pro Asp Val Pro Ala Ile Leu
 180 185 190

gac ggg ctc aac gcc gtc ggc ctc acc agc ctc cag agc ggc atg gac 1161
 Asp Gly Leu Asn Ala Val Gly Leu Thr Ser Leu Gln Ser Gly Met Asp

27/68

195	200	205	210	
aac gtc cgc aac ccc gtc ggc aac ccg ctc gcc ggc atc gac ccc gac				1209
Asn Val Arg Asn Pro Val Gly Asn Pro Leu Ala Gly Ile Asp Pro Asp				
	215	220	225	
gag atc gtc gac acg cga tcc tac acc aac ctc ctc tcc tcc tac atc				1257
Glu Ile Val Asp Thr Arg Ser Tyr Thr Asn Leu Leu Ser Ser Tyr Ile				
	230	235	240	
acc agc aac ttc cag ggc aac ccc acc atc acc aac ctg ccg agg aag				1305
Thr Ser Asn Phe Gln Gly Asn Pro Thr Ile Thr Asn Leu Pro Arg Lys				
	245	250	255	
tgg aac gtg tgc gtg atc ggg tcg cac gat ctg tac gag cac ccg cac				1353
Trp Asn Val Cys Val Ile Gly Ser His Asp Leu Tyr Glu His Pro His				
	260	265	270	
atc aac gac ctc gcg tac atg ccg gcg gtg aag ggc ggc aag ttc ggg				1401
Ile Asn Asp Leu Ala Tyr Met Pro Ala Val Lys Gly Gly Lys Phe Gly				
275	280	285	290	
ttc aac ctc ctt gtc ggc ggg ttc atc agc ccc aag agg tgg gag gag				1449
Phe Asn Leu Leu Val Gly Gly Phe Ile Ser Pro Lys Arg Trp Glu Glu				
	295	300	305	

28 / 68

gcg ctg ccg ctg gac gcc tgg gtc ccc ggc gac gac atc atc ccg gtg 1497
Ala Leu Pro Leu Asp Ala Trp Val Pro Gly Asp Asp Ile Ile Pro Val
310 315 320

tgc aag gcc gtt ctc gag gcg tac cgc gac ctc ggc acc agg ggc aac 1545
Cys Lys Ala Val Leu Glu Ala Tyr Arg Asp Leu Gly Thr Arg Gly Asn
325 330 335

cgc cag aag acc cgc atg atg tgg ctc atc gac gaa ctt gga atg gag 1593
Arg Gln Lys Thr Arg Met Met Trp Leu Ile Asp Glu Leu Gly Met Glu
340 345 350

gct ttt cgg tcg gag gtg gag aag agg atg ccg aac ggc gtg ctg gag 1641
Ala Phe Arg Ser Glu Val Glu Lys Arg Met Pro Asn Gly Val Leu Glu
355 360 365 370

cgc gct gcg ccg gac gac ctc atc gac aag aaa tgg cag agg agg gac 1689
Arg Ala Ala Pro Asp Asp Leu Ile Asp Lys Lys Trp Gln Arg Arg Asp
375 380 385

tac ctc ggc gtg cac ccg cag aag cag gaa ggg atg tcc tac gtc ggc 1737
Tyr Leu Gly Val His Pro Gln Lys Gln Glu Gly Met Ser Tyr Val Gly
390 395 400

ctg cac gtg ccc gtc ggc cgg gtg cag gcg gcg gac atg ttc gag ctc 1785
Leu His Val Pro Val Gly Arg Val Gln Ala Ala Asp Met Phe Glu Leu

29 / 68

405	410	415	
gcc cgc ctt gcc gac gag tat ggc tcc ggc gag ctc cgc ctc acc gtg			1833
Ala Arg Leu Ala Asp Glu Tyr Gly Ser Gly Glu Leu Arg Leu Thr Val			
420	425	430	
gag cag aac atc gtg atc ccg aac gtc aag aac gag aag gtg gag gcg			1881
Glu Gln Asn Ile Val Ile Pro Asn Val Lys Asn Glu Lys Val Glu Ala			
435	440	445	450
ctg ctc gcc gag ccg ctg ctt cag aag ttc tcc ccg cag ccg tcg ctg			1929
Leu Leu Ala Glu Pro Leu Leu Gln Lys Phe Ser Pro Gln Pro Ser Leu			
	455	460	465
ctg ctc aag ggc ctg gtc gcg tgc acc ggc aac cag ttc tgc ggc cag			1977
Leu Leu Lys Gly Leu Val Ala Cys Thr Gly Asn Gln Phe Cys Gly Gln			
470	475	480	
gcc atc atc gag acg aag cag cgg gcg ctg ctg gtg acg tcg cag gtg			2025
Ala Ile Ile Glu Thr Lys Gln Arg Ala Leu Leu Val Thr Ser Gln Val			
485	490	495	
gag aag ctc gtg tcg gtg ccc cgg gcg gtg cgg atg cac tgg acc ggc			2073
Glu Lys Leu Val Ser Val Pro Arg Ala Val Arg Met His Trp Thr Gly			
500	505	510	

30 / 68

tgc ccc aac agc tgc ggc cag gtg cag gtc gcc gac atc ggc ttc atg 2121
Cys Pro Asn Ser Cys Gly Gln Val Gln Val Ala Asp Ile Gly Phe Met
515 520 525 530

ggc tgc ctc acc aag gac agc gcc ggc aag atc gtc gag gcg gcc gac 2169
Gly Cys Leu Thr Lys Asp Ser Ala Gly Lys Ile Val Glu Ala Ala Asp
535 540 545

atc ttc gtc ggc ggc cgc gtc ggc agc gac tcg cac ctc gcc ggc gcg 2217
Ile Phe Val Gly Gly Arg Val Gly Ser Asp Ser His Leu Ala Gly Ala
550 555 560

tac aag aag tcc gtg ccg tgc gac gag ctg gcg ccg atc gtc gcc gac 2265
Tyr Lys Lys Ser Val Pro Cys Asp Glu Leu Ala Pro Ile Val Ala Asp
565 570 575

atc ctg gtc gag cgg ttc ggg gcc gtg cgg agg gag agg gag gag gac 2313
Ile Leu Val Glu Arg Phe Gly Ala Val Arg Arg Glu Arg Glu Glu Asp
580 585 590

gag gag tag gagcacagac tgggggtggtt tgcttgctcc ggtgatctct 2362
Glu Glu
595

cgccgtcctt gtaaagtaga cgacaatatg ccttcgccca tggcacgctt gtactgtcac 2422

31 / 68

gttttggttt gatctttagt cccaaaagtt gtgttcattc tcgttacagt cttacagagg 2482

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20 25 30

Gln Ser Ser Thr Val Ser Ala Pro Ser Ser Ser Thr Pro Ala Ala Asp
35 40 45

Glu Ala Val Ser Ala Glu Arg Leu Glu Pro Arg Val Glu Gln Arg Glu
50 55 60

Gly Arg Tyr Trp Val Leu Lys Glu Lys Tyr Arg Thr Gly Leu Asn Pro
65 70 75 80

3 2 / 6 8

Gln Glu Lys Val Lys Leu Gly Lys Glu Pro Met Ser Leu Phe Met Glu

85

90

95

Gly Gly Ile Lys Glu Leu Ala Lys Met Pro Met Glu Glu Ile Glu Ala

100

105

110

Asp Lys Leu Ser Lys Glu Asp Ile Asp Val Arg Leu Lys Trp Leu Gly

115

120

125

Leu Phe His Arg Arg Lys His Gln Tyr Gly Arg Phe Met Met Arg Leu

130

135

140

Lys Leu Pro Asn Gly Val Thr Thr Ser Glu Gln Thr Arg Tyr Leu Ala

145

150

155

160

Ser Val Ile Glu Ala Tyr Gly Lys Glu Gly Cys Ala Asp Val Thr Thr

165

170

175

Arg Gln Asn Trp Gln Ile Arg Gly Val Thr Leu Pro Asp Val Pro Ala

180

185

190

Ile Leu Asp Gly Leu Asn Ala Val Gly Leu Thr Ser Leu Gln Ser Gly

195

200

205

Met Asp Asn Val Arg Asn Pro Val Gly Asn Pro Leu Ala Gly Ile Asp

210

215

220

33 / 68

Pro Asp Glu Ile Val Asp Thr Arg Ser Tyr Thr Asn Leu Leu Ser Ser
225 230 235 240

Tyr Ile Thr Ser Asn Phe Gln Gly Asn Pro Thr Ile Thr Asn Leu Pro
245 250 255

Arg Lys Trp Asn Val Cys Val Ile Gly Ser His Asp Leu Tyr Glu His
260 265 270

Pro His Ile Asn Asp Leu Ala Tyr Met Pro Ala Val Lys Gly Gly Lys
275 280 285

Phe Gly Phe Asn Leu Leu Val Gly Gly Phe Ile Ser Pro Lys Arg Trp
290 295 300

Glu Glu Ala Leu Pro Leu Asp Ala Trp Val Pro Gly Asp Asp Ile Ile
305 310 315 320

Pro Val Cys Lys Ala Val Leu Glu Ala Tyr Arg Asp Leu Gly Thr Arg
325 330 335

Gly Asn Arg Gln Lys Thr Arg Met Met Trp Leu Ile Asp Glu Leu Gly
340 345 350

Met Glu Ala Phe Arg Ser Glu Val Glu Lys Arg Met Pro Asn Gly Val

3 4 / 6 8

355

360

365

Leu Glu Arg Ala Ala Pro Asp Asp Leu Ile Asp Lys Lys Trp Gln Arg

370

375

380

Arg Asp Tyr Leu Gly Val His Pro Gln Lys Gln Glu Gly Met Ser Tyr

385

390

395

400

Val Gly Leu His Val Pro Val Gly Arg Val Gln Ala Ala Asp Met Phe

405

410

415

Glu Leu Ala Arg Leu Ala Asp Glu Tyr Gly Ser Gly Glu Leu Arg Leu

420

425

430

Thr Val Glu Gln Asn Ile Val Ile Pro Asn Val Lys Asn Glu Lys Val

435

440

445

Glu Ala Leu Leu Ala Glu Pro Leu Leu Gln Lys Phe Ser Pro Gln Pro

450

455

460

Ser Leu Leu Leu Lys Gly Leu Val Ala Cys Thr Gly Asn Gln Phe Cys

465

470

475

480

Gly Gln Ala Ile Ile Glu Thr Lys Gln Arg Ala Leu Leu Val Thr Ser

485

490

495

3 5 / 6 8

Gln Val Glu Lys Leu Val Ser Val Pro Arg Ala Val Arg Met His Trp

500

505

510

Thr Gly Cys Pro Asn Ser Cys Gly Gln Val Gln Val Ala Asp Ile Gly

515

520

525

Phe Met Gly Cys Leu Thr Lys Asp Ser Ala Gly Lys Ile Val Glu Ala

530

535

540

Ala Asp Ile Phe Val Gly Gly Arg Val Gly Ser Asp Ser His Leu Ala

545

550

555

560

Gly Ala Tyr Lys Lys Ser Val Pro Cys Asp Glu Leu Ala Pro Ile Val

565

570

575

Ala Asp Ile Leu Val Glu Arg Phe Gly Ala Val Arg Arg Glu Arg Glu

580

585

590

Glu Asp Glu Glu

595

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catacaaata tagagataag atatcatcct agagatagaa tcctagagat aaaatatagt 1920

cctagagata aatctactct tacttgtacc cctatatata ccccatgaga ggatcaatgc 1980

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ggaggctagg ccatcgctgg attggattta cgaatgaaat atcgatgtga cgaacagaaa 4440

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atg gcc tcc tcc gcc tcc ctg cag cgc ttc ctc ccc ccg tac ccc cac 6048

Met Ala Ser Ser Ala Ser Leu Gln Arg Phe Leu Pro Pro Tyr Pro His

1 5 10 15

gcg gca gca tcc cgc tgc cgc cct ccc ggc gtc cgc gcc cgc ccc gtg 6096

Ala Ala Ala Ser Arg Cys Arg Pro Pro Gly Val Arg Ala Arg Pro Val

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cag tgc tgc acg gtg tcc gca ccg tcc tcc tgc act ccg gcg gcg gac 6144

Gln Ser Ser Thr Val Ser Ala Pro Ser Ser Ser Thr Pro Ala Ala Asp

35 40 45

4 5 / 6 8

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Glu Ala Val Ser Ala Glu Arg Leu Glu Pro Arg Val Glu Gln Arg Glu
50 55 60

ggc cgg tac tgg gtg ctc aag gag aag tac cgg acg ggg ctg aac ccg 6240
Gly Arg Tyr Trp Val Leu Lys Glu Lys Tyr Arg Thr Gly Leu Asn Pro
65 70 75 80

cag gag aag gtg aag ctg ggg aag gag ccc atg tca ttg ttc atg gag 6288
Gln Glu Lys Val Lys Leu Gly Lys Glu Pro Met Ser Leu Phe Met Glu
85 90 95

ggc ggc atc aag gag ctc gcc aag atg ccc atg gag gag atc gag gcc 6336
Gly Gly Ile Lys Glu Leu Ala Lys Met Pro Met Glu Glu Ile Glu Ala
100 105 110

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Asp Lys Leu Ser Lys Glu Asp Ile Asp Val Arg Leu Lys Trp Leu Gly
115 120 125

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Leu Phe His Arg Arg Lys His Gln
130 135

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Tyr Gly Arg Phe

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atg atg cgg ctg aag ctg cca aac ggt gtg acg acg agc gag cag acg 10313
Met Met Arg Leu Lys Leu Pro Asn Gly Val Thr Thr Ser Glu Gln Thr

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agg tac ctg gcg agc gtg atc gag gcg tac ggc aag gag ggc tgc gcc			10361
Arg Tyr Leu Ala Ser Val Ile Glu Ala Tyr Gly Lys Glu Gly Cys Ala			
160	165	170	
gac gtg aca acc cgc cag aac tgg cag atc cgc ggc gtc acg ctc ccc			10409
Asp Val Thr Thr Arg Gln Asn Trp Gln Ile Arg Gly Val Thr Leu Pro			
175	180	185	
gac gtg ccg gcc atc ctc gac ggg ctc aac gcc gtc ggc ctc acc agc			10457
Asp Val Pro Ala Ile Leu Asp Gly Leu Asn Ala Val Gly Leu Thr Ser			
190	195	200	
ctc cag agc ggc atg gac aac gtc cgc aac ccc gtc ggc aac ccg ctc			10505
Leu Gln Ser Gly Met Asp Asn Val Arg Asn Pro Val Gly Asn Pro Leu			
205	210	215	220
gcc ggc atc gac ccc gac gag atc gtc gac acg cga tcc tac acc aac			10553
Ala Gly Ile Asp Pro Asp Glu Ile Val Asp Thr Arg Ser Tyr Thr Asn			
225	230	235	
ctc ctc tcc tcc tac atc acc agc aac ttc cag ggc aac ccc acc atc			10601
Leu Leu Ser Ser Tyr Ile Thr Ser Asn Phe Gln Gly Asn Pro Thr Ile			
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acc aac ct gtgagtgatc gaatcaaatt gatcatgctc tgtgctgtgc 10649

Thr Asn Leu

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Pro Arg Lys Trp Asn Val Cys Val Ile Gly Ser His Asp Leu Tyr

260

265

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gag cac cca cac atc aac gac ctc gcg tac atg ccg gcg gtg aag ggc 10805

Glu His Pro His Ile Asn Asp Leu Ala Tyr Met Pro Ala Val Lys Gly

275

280

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ggc aag ttc ggg ttc aac ctc ctc gtc ggc ggg ttc ata agc ccc aag 10853

Gly Lys Phe Gly Phe Asn Leu Leu Val Gly Gly Phe Ile Ser Pro Lys

290

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300

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Arg Trp Glu Glu Ala Leu Pro Leu Asp Ala Trp Val Pro Gly Asp Asp

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315

atc atc ccg gtg tgc aag gcc gtt ctc gag gcg tac cgc gac ctc ggc 10949

Ile Ile Pro Val Cys Lys Ala Val Leu Glu Ala Tyr Arg Asp Leu Gly

320

325

330

5 3 / 6 8

acc agg ggc aac cgc cag aag acc cgc atg atg tgg ctc atc gac gaa 10997
Thr Arg Gly Asn Arg Gln Lys Thr Arg Met Met Trp Leu Ile Asp Glu
335 340 345 350

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Leu

gtcccaatgt tcttatcagt taattgcggt gttggcattg cag gga atg gag gct 11105
Gly Met Glu Ala
355

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Phe Arg Ser Glu Val Glu Lys Arg Met Pro Asn Gly Val Leu Glu Arg
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Ala Ala Pro Glu Asp Leu Ile Asp Lys Lys Trp Gln Arg Arg Asp Tyr
375 380 385

ctc ggc gtg cac ccg cag aag cag gaa ggg atg tcc tac gtc ggc ctg 11249
Leu Gly Val His Pro Gln Lys Gln Glu Gly Met Ser Tyr Val Gly Leu
390 395 400

cac gtg ccc gtc ggc cgg gtg cag gcg gcg gac atg ttc gag ctc gca 11297
His Val Pro Val Gly Arg Val Gln Ala Ala Asp Met Phe Glu Leu Ala

405	410	415	
cgc ctc gcc gac gag tac ggc tcc ggc gag ctc cgc ctc acc gtg gag			11345
Arg Leu Ala Asp Glu Tyr Gly Ser Gly Glu Leu Arg Leu Thr Val Glu			
420	425	430	435
cag aac atc gtg atc ccg aac gtc aag aac gag aag gtg gag gcg ctg			11393
Gln Asn Ile Val Ile Pro Asn Val Lys Asn Glu Lys Val Glu Ala Leu			
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ctc tcc gag ccg ctg ctt cag aag ttc tcc ccg cag ccg tcg ctg ctg			11441
Leu Ser Glu Pro Leu Leu Gln Lys Phe Ser Pro Gln Pro Ser Leu Leu			
	455	460	465
ctc aag ggc ctc gtc gcg tgc acc ggc aac cag ttc tgc ggc cag gcc			11489
Leu Lys Gly Leu Val Ala Cys Thr Gly Asn Gln Phe Cys Gly Gln Ala			
	470	475	480
atc atc gag acg aag cag cgg gcg ctg ctg gtg acg tcg cag gtg gag			11537
Ile Ile Glu Thr Lys Gln Arg Ala Leu Leu Val Thr Ser Gln Val Glu			
	485	490	495
aag ctc gtg tcg gtg ccc cgg gcg gtg cgg atg cac tgg acc ggc tgc			11585
Lys Leu Val Ser Val Pro Arg Ala Val Arg Met His Trp Thr Gly Cys			
500	505	510	515

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ccc aac agc tgc ggc cag gtg cag gtc gcc gac atc ggc ttc atg ggc 11633
Pro Asn Ser Cys Gly Gln Val Gln Val Ala Asp Ile Gly Phe Met Gly
520 525 530

tgc ctc acc aag gac agc gcc ggc aag atc gtt gag gcg gcc gac atc 11681
Cys Leu Thr Lys Asp Ser Ala Gly Lys Ile Val Glu Ala Ala Asp Ile
535 540 545

ttc gtc ggc ggc cgc gtc ggc agc gac tcg cac ctc gcc ggc gcg tac 11729
Phe Val Gly Gly Arg Val Gly Ser Asp Ser His Leu Ala Gly Ala Tyr
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aag aag tcc gtg ccg tgc gac gag ctg gcg ccg atc gtc gcc gac atc 11777
Lys Lys Ser Val Pro Cys Asp Glu Leu Ala Pro Ile Val Ala Asp Ile
565 570 575

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Leu Val Glu Arg Phe Gly Ala Val Arg Arg Glu Arg Glu Glu Asp Glu
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Glu

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5 6 / 6 8

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cgcccccatc cctctcgctt ttcccttgcc ggcagcagag gaggcggcag cgacggcttc 180

5 7 / 6 8

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tccggcgggt ggatacaaat cagtgttccg ataggtaaaa ccctgctctc agcatctgcc 300

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Met Ala Ser Ser Ala Ser

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5

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Leu Gln Arg Phe Leu Pro Pro Tyr Pro His Ala Ala Ala Ser Arg Cys

10

15

20

cgc cct ccc ggc gtc cgc gcc cgc ccc gtg cag tcg tcg acg gtg tcc 632

Arg Pro Pro Gly Val Arg Ala Arg Pro Val Gln Ser Ser Thr Val Ser

25

30

35

gca ccg tcc tcc tcg act ccg gcg gcg gac gag gcc gtg tcg gcg gag 680

Ala Pro Ser Ser Ser Thr Pro Ala Ala Asp Glu Ala Val Ser Ala Glu

40

45

50

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cgg	ctg	gag	ccg	cgg	gtg	gag	cag	cgg	gag	ggc	cgg	tac	tgg	gtg	ctc	728
Arg	Leu	Glu	Pro	Arg	Val	Glu	Gln	Arg	Glu	Gly	Arg	Tyr	Trp	Val	Leu	
55					60					65					70	

aag	gag	aag	tac	cgg	acg	ggg	ctg	aac	ccg	cag	gag	aag	gtg	aag	ctg	776
Lys	Glu	Lys	Tyr	Arg	Thr	Gly	Leu	Asn	Pro	Gln	Glu	Lys	Val	Lys	Leu	
					75					80					85	

ggg	aag	gag	ccc	atg	tca	ttg	ttc	atg	gag	ggc	ggc	atc	aag	gag	ctc	824
Gly	Lys	Glu	Pro	Met	Ser	Leu	Phe	Met	Glu	Gly	Gly	Ile	Lys	Glu	Leu	
			90						95						100	

gcc	aag	atg	ccc	atg	gag	gag	atc	gag	gcc	gac	aag	ctc	tcc	aag	gag	872
Ala	Lys	Met	Pro	Met	Glu	Glu	Ile	Glu	Ala	Asp	Lys	Leu	Ser	Lys	Glu	
			105						110						115	

gac	atc	gac	gtg	cgg	ctc	aag	tgg	ctc	ggc	ctc	ttc	cac	cgc	cgc	aag	920
Asp	Ile	Asp	Val	Arg	Leu	Lys	Trp	Leu	Gly	Leu	Phe	His	Arg	Arg	Lys	
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cat	cag	tat	ggg	cgg	ttc	atg	atg	cgg	ctg	aag	ctg	cca	aac	ggg	gtg	968
His	Gln	Tyr	Gly	Arg	Phe	Met	Met	Arg	Leu	Lys	Leu	Pro	Asn	Gly	Val	
			135						140						150	

acg	acg	agc	gag	cag	acg	agg	tac	ctg	gcg	agc	gtg	atc	gag	gcg	tac	1016
Thr	Thr	Ser	Glu	Gln	Thr	Arg	Tyr	Leu	Ala	Ser	Val	Ile	Glu	Ala	Tyr	

5 9 / 6 8

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Gly Lys Glu Gly Cys Ala Asp Val Thr Thr Arg Gln Asn Trp Gln Ile			
170	175	180	
cgc ggc gtc acg ctc ccc gac gtg ccg gcc atc ctc gac ggg ctc aac			1112
Arg Gly Val Thr Leu Pro Asp Val Pro Ala Ile Leu Asp Gly Leu Asn			
185	190	195	
gcc gtc ggc ctc acc agc ctc cag agc ggc atg gac aac gtc cgc aac			1160
Ala Val Gly Leu Thr Ser Leu Gln Ser Gly Met Asp Asn Val Arg Asn			
200	205	210	
ccc gtc ggc aac ccg ctc gcc ggc atc gac ccc gac gag atc gtc gac			1208
Pro Val Gly Asn Pro Leu Ala Gly Ile Asp Pro Asp Glu Ile Val Asp			
215	220	225	230
acg cga tcc tac acc aac ctc ctc tcc tcc tac atc acc agc aac ttc			1256
Thr Arg Ser Tyr Thr Asn Leu Leu Ser Ser Tyr Ile Thr Ser Asn Phe			
235	240	245	
cag ggc aac ccc acc atc acc aac ctg ccg agg aag tgg aac gtg tgc			1304
Gln Gly Asn Pro Thr Ile Thr Asn Leu Pro Arg Lys Trp Asn Val Cys			
250	255	260	

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 Val Ile Gly Ser His Asp Leu Tyr Glu His Pro His Ile Asn Asp Leu
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 Asp Ala Trp Val Pro Gly Asp Asp Ile Ile Pro Val Cys Lys Ala Val
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 Leu Glu Ala Tyr Arg Asp Leu Gly Thr Arg Gly Asn Arg Gln Lys Thr
 330 335 340

cgc atg atg tgg ctc atc gac gaa ctt gga atg gag gct ttt cgg tgc 1592
 Arg Met Met Trp Leu Ile Asp Glu Leu Gly Met Glu Ala Phe Arg Ser
 345 350 355

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 Glu Val Glu Lys Arg Met Pro Asn Gly Val Leu Glu Arg Ala Ala Pro

360	365	370	
gag gac ctc atc gac aag aaa tgg cag agg agg gac tac ctc ggc gtg			1688
Glu Asp Leu Ile Asp Lys Lys Trp Gln Arg Arg Asp Tyr Leu Gly Val			
375	380	385	390
cac ccg cag aag cag gaa ggg atg tcc tac gtc ggc ctg cac gtg ccc			1736
His Pro Gln Lys Gln Glu Gly Met Ser Tyr Val Gly Leu His Val Pro			
	395	400	405
gtc ggc cgg gtg cag gcg gcg gac atg ttc gag ctc gca cgc ctc gcc			1784
Val Gly Arg Val Gln Ala Ala Asp Met Phe Glu Leu Ala Arg Leu Ala			
	410	415	420
gac gag tac ggc tcc ggc gag ctc cgc ctc acc gtg gag cag aac atc			1832
Asp Glu Tyr Gly Ser Gly Glu Leu Arg Leu Thr Val Glu Gln Asn Ile			
	425	430	435
gtg atc ccg aac gtc aag aac gag aag gtg gag gcg ctg ctc tcc gag			1880
Val Ile Pro Asn Val Lys Asn Glu Lys Val Glu Ala Leu Leu Ser Glu			
	440	445	450
ccg ctg ctt cag aag ttc tcc ccg cag ccg tcg ctg ctg ctc aag ggc			1928
Pro Leu Leu Gln Lys Phe Ser Pro Gln Pro Ser Leu Leu Leu Lys Gly			
455	460	465	470

ctc gtc gcg tgc acc ggc aac cag ttc tgc ggc cag gcc atc atc gag	1976
Leu Val Ala Cys Thr Gly Asn Gln Phe Cys Gly Gln Ala Ile Ile Glu	
475 480 485	
acg aag cag cgg gcg ctg ctg gtg acg tcg cag gtg gag aag ctc gtg	2024
Thr Lys Gln Arg Ala Leu Leu Val Thr Ser Gln Val Glu Lys Leu Val	
490 495 500	
tcg gtg ccc cgg gcg gtg cgg atg cac tgg acc ggc tgc ccc aac agc	2072
Ser Val Pro Arg Ala Val Arg Met His Trp Thr Gly Cys Pro Asn Ser	
505 510 515	
tgc ggc cag gtg cag gtc gcc gac atc ggc ttc atg ggc tgc ctc acc	2120
Cys Gly Gln Val Gln Val Ala Asp Ile Gly Phe Met Gly Cys Leu Thr	
520 525 530	
aag gac agc gcc ggc aag atc gtt gag gcg gcc gac atc ttc gtc ggc	2168
Lys Asp Ser Ala Gly Lys Ile Val Glu Ala Ala Asp Ile Phe Val Gly	
535 540 545 550	
ggc cgc gtc ggc agc gac tcg cac ctc gcc ggc gcg tac aag aag tcc	2216
Gly Arg Val Gly Ser Asp Ser His Leu Ala Gly Ala Tyr Lys Lys Ser	
555 560 565	
gtg ccg tgc gac gag ctg gcg ccg atc gtc gcc gac atc ctg gtc gag	2264
Val Pro Cys Asp Glu Leu Ala Pro Ile Val Ala Asp Ile Leu Val Glu	

6 3 / 6 8

570

575

580

cgg ttc ggg gcc gtg cgg agg gag agg gag gag gac gag gag tag 2309

Arg Phe Gly Ala Val Arg Arg Glu Arg Glu Glu Asp Glu Glu

585

590

595

gaacacagac tggggtgttt tgcttgctcc ggtgatctct cgccgtcctt gtaaagtaga 2369

cgacaatatg ccttcgccca tggcacgctt gtactgtcac gttttggttt gatctttag 2429

cccaaaagtt gtgttcattc tcgttacagt cttacagagg atgattgatt gataaataaa 2489

gaagaaacag attctgcaa 2508

<210> 6

<211> 596

<212> PRT

<213> Oryza sativa

<400> 6

Met Ala Ser Ser Ala Ser Leu Gln Arg Phe Leu Pro Pro Tyr Pro His

1

5

10

15

Ala Ala Ala Ser Arg Cys Arg Pro Pro Gly Val Arg Ala Arg Pro Val

20

25

30

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Gln Ser Ser Thr Val Ser Ala Pro Ser Ser Ser Thr Pro Ala Ala Asp
35 40 45

Glu Ala Val Ser Ala Glu Arg Leu Glu Pro Arg Val Glu Gln Arg Glu
50 55 60

Gly Arg Tyr Trp Val Leu Lys Glu Lys Tyr Arg Thr Gly Leu Asn Pro
65 70 75 80

Gln Glu Lys Val Lys Leu Gly Lys Glu Pro Met Ser Leu Phe Met Glu
85 90 95

Gly Gly Ile Lys Glu Leu Ala Lys Met Pro Met Glu Glu Ile Glu Ala
100 105 110

Asp Lys Leu Ser Lys Glu Asp Ile Asp Val Arg Leu Lys Trp Leu Gly
115 120 125

Leu Phe His Arg Arg Lys His Gln Tyr Gly Arg Phe Met Met Arg Leu
130 135 140

Lys Leu Pro Asn Gly Val Thr Thr Ser Glu Gln Thr Arg Tyr Leu Ala
145 150 155 160

Ser Val Ile Glu Ala Tyr Gly Lys Glu Gly Cys Ala Asp Val Thr Thr

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165

170

175

Arg Gln Asn Trp Gln Ile Arg Gly Val Thr Leu Pro Asp Val Pro Ala

180

185

190

Ile Leu Asp Gly Leu Asn Ala Val Gly Leu Thr Ser Leu Gln Ser Gly

195

200

205

Met Asp Asn Val Arg Asn Pro Val Gly Asn Pro Leu Ala Gly Ile Asp

210

215

220

Pro Asp Glu Ile Val Asp Thr Arg Ser Tyr Thr Asn Leu Leu Ser Ser

225

230

235

240

Tyr Ile Thr Ser Asn Phe Gln Gly Asn Pro Thr Ile Thr Asn Leu Pro

245

250

255

Arg Lys Trp Asn Val Cys Val Ile Gly Ser His Asp Leu Tyr Glu His

260

265

270

Pro His Ile Asn Asp Leu Ala Tyr Met Pro Ala Val Lys Gly Gly Lys

275

280

285

Phe Gly Phe Asn Leu Leu Val Gly Gly Phe Ile Ser Pro Lys Arg Trp

290

295

300

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Glu Glu Ala Leu Pro Leu Asp Ala Trp Val Pro Gly Asp Asp Ile Ile
305 310 315 320

Pro Val Cys Lys Ala Val Leu Glu Ala Tyr Arg Asp Leu Gly Thr Arg
325 330 335

Gly Asn Arg Gln Lys Thr Arg Met Met Trp Leu Ile Asp Glu Leu Gly
340 345 350

Met Glu Ala Phe Arg Ser Glu Val Glu Lys Arg Met Pro Asn Gly Val
355 360 365

Leu Glu Arg Ala Ala Pro Glu Asp Leu Ile Asp Lys Lys Trp Gln Arg
370 375 380

Arg Asp Tyr Leu Gly Val His Pro Gln Lys Gln Glu Gly Met Ser Tyr
385 390 395 400

Val Gly Leu His Val Pro Val Gly Arg Val Gln Ala Ala Asp Met Phe
405 410 415

Glu Leu Ala Arg Leu Ala Asp Glu Tyr Gly Ser Gly Glu Leu Arg Leu
420 425 430

Thr Val Glu Gln Asn Ile Val Ile Pro Asn Val Lys Asn Glu Lys Val
435 440 445

Glu Ala Leu Leu Ser Glu Pro Leu Leu Gln Lys Phe Ser Pro Gln Pro
450 455 460

Ser Leu Leu Leu Lys Gly Leu Val Ala Cys Thr Gly Asn Gln Phe Cys
465 470 475 480

Gly Gln Ala Ile Ile Glu Thr Lys Gln Arg Ala Leu Leu Val Thr Ser
485 490 495

Gln Val Glu Lys Leu Val Ser Val Pro Arg Ala Val Arg Met His Trp
500 505 510

Thr Gly Cys Pro Asn Ser Cys Gly Gln Val Gln Val Ala Asp Ile Gly
515 520 525

Phe Met Gly Cys Leu Thr Lys Asp Ser Ala Gly Lys Ile Val Glu Ala
530 535 540

Ala Asp Ile Phe Val Gly Gly Arg Val Gly Ser Asp Ser His Leu Ala
545 550 555 560

Gly Ala Tyr Lys Lys Ser Val Pro Cys Asp Glu Leu Ala Pro Ile Val
565 570 575

Ala Asp Ile Leu Val Glu Arg Phe Gly Ala Val Arg Arg Glu Arg Glu

6 8 / 6 8

580

585

590

Glu Asp Glu Glu

595